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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/726,903 | 11/29/2000 | Pooi See Lee | CHAR.P0003 | 3317 |

23349 7590 08/27/2003

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EXAMINER

GARCIA, JOANNIE A

ART UNIT PAPER NUMBER

2823

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,903

Applicant(s)

LEE ET AL.

Examiner

Joannie A Garcia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

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Claim 8 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1.

When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 8, and 10-15, are rejected under 35 U.S.C. 102(e) as being anticipated by Miura et al (U.S. Patent 6,346,465).

Miura et al discloses forming a processed substrate including partially fabricated integrated circuit components such as a gate oxide film 12, a gate electrode 13, s/d regions 14, and spacers 15, and a silicon substrate 1 and isolation oxide 11 that electrically isolate neighboring integrated circuits devices (Figure 3A, and Column 8, lines 39-53), incorporating nitrogen into at least a region smaller than the entire top surface of the processed substrate and annealing the processed substrate (Figure 3B, and Column 8, lines 56-61), depositing nickel 3 onto said processed substrate after incorporating nitrogen into said substrate (Figure 3C, and Column 9, lines 8-12, and 65-66), and annealing said processed substrate at a temperature of 750 °C so as to form nickel silicide 4 (Figure 3D, and Column 9, lines 4-10, and 65-66). Miura et al

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discloses that said depositing nickel comprises applying a solution including hydrogen fluoride and blanket sputter depositing 300 angstroms of said nickel onto said processed substrate (Column 8, lines 54-56, and Column 9, lines 1-3), removing unreacted nickel after said annealing said processed substrate so as to form nickel silicide using sulfuric acid or nitric acid (Column 9, lines 31-34), depositing a dielectric material 17 onto said substrate, selectively etching, planarizing said processed substrate (Figure 3F, and Column 9, lines 39-42), depositing metal onto said substrate and selectively etching to form metal lines 6 (Figure 3F, and Column 9, lines 44-49), and that said annealing said processed substrate so as to form nickel silicide and said removing unreacted nickel comprise a process to form a gate electrode including nickel silicide and polycrystalline silicon that is electrically isolated from a s/d contact including nickel silicide and single crystal silicon (Figure 3F).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al as applied to claims 1-3, 8, and 10-15 above, and further in view of the following comments.

Miura et al does not teach that said annealing said processed substrate prior to said depositing nickel comprises rapid thermal processing at a temperature between 800 °C and 1000 °C for a duration of between 30 seconds and 60 seconds. It would have been a matter of routine optimization within the teachings of Miura et al to determine a suitable temperature and time duration to achieve the annealing step performed after the incorporating nitrogen into the substrate.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. See **MPEP 203.08**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner J. Garcia whose telephone number is (703) 306-5733. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax number for this group is

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(703) 308-7722 (and 7724), and (703) 305-3431 (and 3432). MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.



JAG
8/22/03



George Fourson
Primary Examiner